

NASA TechTracS

Detailed Design Document



TechFinder Archive
(Mod 80)

Prepared by Knowledge Sharing Systems, Inc.

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080.02.05 Appendix**Introduction**

This modification to NASA TechTracS was requested in a Work Request from Dianne Cheek of NASA Langley Research Center, and is designated as Mod 80.

It consist of changes and additions to existing data structures and revisions to displays and processes.

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Reuse Strategy

Since this development effort is primarily a series of modifications to an existing module in NASA TechTracS, extensive re-use of existing forms and reports will be made. The tools and objects currently in use in NASA TechTracS will be employed where appropriate. These include:

- Custom find methods
- Streamlined relate methods (Relate pop-up)
- Page navigation methods (More pop-up)
- Record navigation methods (Record pop-up)
- List Manager pop-up menus
- Full screen text edit windows
- People and Company autolinking (Business Card buttons)
- Keyword management module
- Auto Agent/Personal Agent batch processing
- Record maintenance audit (I button)
- Standard List window methods
- Standard Record window methods

Quality Assurance

In order to maintain high quality design and construction the following QA elements will be incorporated:

- All program code must adhere to defined standards, especially in the area of method, form and object naming conventions. The support website contains details of these in the "Coding and Structure Rules" link. More in depth programming standards are also on the support site via the "KSS 4D Programming Rules"
- All system interfaces must also adhere to NASA defined standards. The support website contains these "NASA TechTracS Interface Standards".
- All errors discovered during any formal testing will be recorded in the online Knowledge Sharing Systems Bug Reporting System. This will help ensure that errors are not identified more than once and that they are properly resolved.
- Unit Tests of discrete components will be performed by the developer. These components will be identified in the Detailed Development Plan. As far as is practicable, the goal of this testing is to prove that a given software component performs as designed before it is exposed to the larger environment of integration or system testing. For example, each method should be unit tested to verify proper use of passed parameters and, if appropriate, returned results. Developers will also verify that the components adhere to the Component Checklists as part of the Unit Test. See the Component Reviews below for more details.
- Developers will perform source code tracing where appropriate to prove that the code executes as expected. Research has shown that regular use of source code tracing and unit testing will identify many errors early in the development cycle. Errors identified early are more easily and more cost-effectively resolved.

- Component Reviews will be conducted by an appointed reviewer(s) and reported to the developer. The Component Review Checklists will be used to ensure consistent review quality. Once a component has passed its review, it may participate in integration testing. Part of the review will include an analysis of the component by scanning TechTracS source with SanityCheck from Foresight Solutions. SanityCheck is an application that will perform a read-only scan of the 4th Dimension™ structure file. SanityCheck sifts through the structure file looking for common programming problems as well as checking the integrity of all objects (Forms, Methods, etc) within the structure file. The component checklists are also available on the support site for the following links: Construction Design Checklist", "Form Checklist", "Structure Checklist", and "Code Checklist".
- Integration Tests will be conducted to ensure that all new or modified components perform as expected when combined with other elements of NASA TechTracS. Due to the integrated nature of the TechTracS development process, extensive, detailed integration testing is inappropriate. However, sufficient testing should be performed to ensure compatibility with other components of the system.
- System Tests will be combined with testing of other modifications that are scheduled for the same release. A system test sequence will be developed to fully validate that the modifications have been properly implemented. After release, the system test sequence should be incorporated into regression test plans for future modifications.

User Manual

The Technology section of the TechTracS User Manual and the Contents section of the DBA Manual will be revised to reflect the changes detailed herein. The revision shall contain detailed descriptions of the operations available to the user and will be prepared as an independent document that can be manually inserted into the existing user manual and will also be made available electronically as a PDF file.

Technology Module Changes (Mod 80)

- Added a new checkbox labeled "Mark as Inactive Technology at TechFinder" in the TT View. When checked, the status of a public Technology record at the NASA Technology Access System or TechFinder web site is set to Inactive. Users from the web will be unable to request more information on Inactive Technologies. Otherwise, all standard web-based information is available.

Constants Module Changes (Mod 80)

- p3. Add a new checkbox labeled "Archive Contract_Grant on TechFinder after" and an entry field labeled "Months". When checked, the status of a public Contract_Grant record at the NASA Technology Access System or TechFinder web site is set to Inactive after the number of months in the adjacent "Months" field. Inactive Contract_Grant records or Programs are removed from TechFinder when they are Inactive. The months until Inactive is based on the Contract Award date.

Design Methodology

Since this is a modification to the existing Technology module and License module as viewed from the [Technology] and [License] tables in NASA TechTracS, the standard "NASA TechTracS Design Methodology" shall be followed. See the support site for these methodologies.

The standards currently used in NASA TechTracS will be employed and extended as detailed herein:

Design Status

Below are changes in the requirements since the Requirements Document was approved. This include items modified in the Design phase and items that will not work as the user expects. Requirements that require further discussion will be added to the Issue Table section in the Reviews Document.

Design items of note are:

- The occurrence of the Archived Technology Disclaimer on the TechFinder web site has changed. The disclaimer will only be displayed on the single record page of Inactive Technologies.

Development and Operational Environment

Modifications to TechTracS are required to be compatible with the following processors and operating systems:

1. Intel Pentium - Windows 95, Windows 98, Windows NT 4
2. Motorola PowerPC - Mac OS 8.x

Requirements Matrix

The Requirements Matrix is key map denoting what areas of development are necessary to fully satisfy the requirements. The "Req." column refers to the Requirement Number corresponding to that used in the Requirements Document for this mod. The remaining columns list the Structure, Record Form/Custom Dialog, List Form/Find Dialog, Custom Report and Major Method items created or modified to meet the specified requirement number. Details on these items can be found in the Detailed Development Plan section.

Requirements Matrix

Req.	Structure	Record Form	List Form	Report	Method
1.	[Technology] Archived	[Technology]input.T			twDispMatches twDispMatches... Archived twShowMatches

2.					
4.					
5.					
6.					twDispTechItem
7.	[Constants]CG_Archived_After_Num_Months [Constants]CG_Archived [Contract_Grant]Archived	[Constants]input [Contract_Grant]input			cg_scan
8.					

Detailed Development Plan - Table of Contents

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Introduction

This Modification is a redesign of the existing TechTracS Technology and Constants modules. The changes include modifications to existing tables in addition to new tables and fields. Display forms are redesigned to accommodate the database changes.

Structure

In order to support the requirements of this modification, changes and additions to the existing NASA TechTracS database structure must be performed.

[Technology]

Structure Revision: Modification

Table Name: [Technology]

OkToAddRecords: Yes

OKToDeleteRecs: Yes

HQ WAN: Yes

NTAS WAN: Yes

Description: The [Technology] table is the primary data repository for technology related information. The following field is new.

[Technology] Structure Modifications

Req.	Field Name	Description	Type
1.	Archived (field) an archived Technology at NTAS.	Identifies if the Technology is treated as	Boolean

[License]

Structure Revision: Modification

Table Name: [Contract_Grant]

OkToAddRecords: Yes

OKToDeleteRecs: Yes

HQ WAN: Yes

NTAS WAN: Yes

Description: The [Contract_Grant] table is responsible for holding information about NASA's contracts.

[License] Structure Modifications

Req.	Field Name	Description	Type
7.	Archived (new field) an archived Contract at NTAS. Archived Contracts are not displayed.	Identifies if the Contract is treated as	Boolean

[Tech Innovator]**Structure Revision:** Modification**Table Name:** [Constants]**OkToAddRecords:** Yes**OKToDeleteRecs:** Yes**HQ WAN:** Yes**NTAS WAN:** Yes**Description:** The [Constants] tables hold default settings and many configuration values.**[Tech Innovator] Structure Modifications**

Req.	Field Name	Description	Type
6.	CG_Archived_After_Num_Months	Number of Moneths until a Contact is marked as archived and removed from the NTAS database.	Long Int

Record Forms/Custom Dialogs

The following record forms (data input windows) and custom dialogs need to be added or modified as result of this mod.

[Technology]Input.T**Form Name:** [Technology]Input.T**New or Modified:** Modified**Menu Bar:** -2

Description: Several changes including adding the following: a radio button to indicate when a technology should be treated as an archived technology at NTAS.

Page(s)

Page Number	Name	New
??.	Related Cases / TechFinder	No

Page Number: ??
Page Name: Related Cases / TechFinder
Method(s): ??

Fields Used on Page ??

Req.	Field Name	Label	Enterable
1.	Archived	Archived on NTAS / TechFinder	Yes

Other Objects Used on Page ??

Req.	Type	Description
1.	Checkbox	Archived on NTAS.

Special Processing on Page 0

None

Note: Repeat these actions for [Technology]Input.N to produce the same results.

Mockup of [Technology] record that is not approved for public release

[Technology]Input.P

Form Name: [Technology]Input.P

New or Modified: Modified

Menu Bar: -2

Description: Made several changes including adding the following: a radio button to indicate when a technology should be treated as an archived technology at NTAS.

Page(s)

Page Number	Name	New
??.	Related Cases / TechFinder	No

Page Number: ??

Page Name: ??

Method(s): None

Fields Used on Page ??

Req.	Field Name	Label	Enterable
1.	Archived	Archived on NTAS / TechFinder	Yes

Other Objects Used on Page ??

Req.	Type	Description
6.	Checkbox	Archived on NTAS.

Special Processing on Page ??

None

Mockup of Patent View [Technology] record that is not approved for public release

[Technology]Input.N

Form Name: [Technology]Input.N
New or Modified: Modified
Menu Bar: -2
Description: Made several changes including adding the following: a radio button to indicate when a technology should be treated as an archived technology at NTAS.

Page(s)

Page Number	Name	New
??	Related Cases / TechFinder	No

Page Number: ??

Page Name: Related Cases / TechFinder

Method(s): None

Fields Used on Page 1

Req.	Field Name	Label	Enterable
1.	Archived	Archived on NTAS / TechFinder	Yes

Other Objects Used on Page 1

Req.	Type	Description
5.	Checkbox	Archived on NTAS / TechFinder.

Special Processing on Page 1

None

Mockup of [License]TechnologyIncluded

[Constants]Input

Form Name: [Constants]Input
New or Modified: Modified
Menu Bar:
Description: This form allows access to varied global configuration settings.

Page(s)

Page Number	Name	New
4	TechFinder / WWW	No

Page Number: 4

Page Name: TechFinder / WWW

Method(s): None

Fields Used on Page 1

Req.	Field Name	Label	Enterable
7.	CG_Archived_After_Num_Months	CG Archived after xx Months	Yes

Other Objects Used on Page 1

Req.	Type	Description
7.	Label of archived at NTAS.	Length in months before Contract_Grant records are set to a status

Special Processing on Page 1

Value is checked by the CG Scan.

Mockup of [Publication]Simple input with Title label

List Forms/Find Dialogs

The following List forms and Find dialogs need to be added or modified as result of this mod:

None

Custom Reports

There are no custom reports added as result of this mod:

Major Methods

The following methods (include conversion methods) need to be added or modified as result of this mod:

Method Name: twDispMatches

New or Modified: Modified

User Method: No

Requirement(s): 1-5

Description: After a Technology search, [Technology] records matching the search criteria are displayed to the user's web browser in a paged format.

Method Name: twDispMatchesArchived

New or Modified: Modified

User Method: No

Requirement(s): 1-5

Description: After a Technology search, [Technology] records marked as "Archived" with the [Technology]Archived field set to true are displayed in a separate section on the TechFinder Results page. Un-archived result totals are listed first. Also, a disclaimer on the page lets the user know that no more information is available on the "Archived" [Technology] records.

Method Name: twDispTechItem

New or Modified: Modified

User Method: No

Requirement(s): 1 - 5

Description: When a [Technology] record is set as "Archived" the single record view provided by the twDispTechItem does not include the request for more information submission. Also, a disclaimer on the page lets the user know that no more information is available on the "Archived" [Technology] records.

Method Name: twShowMatches

New or Modified: Modified

User Method: No

Requirement(s): 1-5

Description: After a TechFinder Technology search, [Technology], [Success_Story], [TOPS], and [Contract_Grant] record totals are displayed that match the search criteria. The user can then click on a link for one of the tables to display a listing of matches for that table. Active and Incative [Technology] records are broken into two different links.

Method Name: CG_Scan

New or Modified: Modified

User Method: No

Requirement(s): 8

Description: When a [Contract_Grant] record exceeds the value of setting [Constants]Archive_After_Num_Months from the [Contract_Grant]Date_Awarded, in months, the [Contract_Grant]Archived boolean field is set to True. In addition, the [Contract_Grant]Release_to_Public boolean is set to False. This setting causes the [Contract_Grant] record to be removed from the NTAS database.

Appendix